



FRAV20030009 US NP Sequence Listing.txt
LISTE DE SEQUENCES

<110> AVENTIS PHARMA SA
GUILLAUME, Jean-Marc
DITTRICH, Werner
PEREZ, Sandrine
ANDREONI, Christine Michelle Pierrette
PAILLOT, Romain

<120> METHOD FOR OBTAINING MASTOCYTE LINES FROM PIG TISSUES AND FOR PRODUCING
HEPARIN-TYPE MOLECULES

<130> FRAV2003/0009 US NP

<140> 10/823,142
<141> 2004-04-13

<150> 60/477,962
<151> 2003-06-12

<150> FR 0304671
<151> 2003-04-14

<160> 34

<170> PatentIn Ver. 2.1

<210> 1
<211> 3952
<212> DNA
<213> Sus scrofa

<220>
<221> misc_feature
<222> (38)..(38)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (41)..(41)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (3637)..(3637)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (3923)..(3923)
<223> n is a, c, g, or t

<400> 1
attggggccga cgctcgcatgc tcccggccgg ccgccatntc ngccgcggga aattcgattg 60
gaattcctcg agagcaggaa cgtggaaagg agctccggtc ccagagcagc caccgcgatg 120
agaggcgctc gccgcgcctg ggattttctc ttcgtcctgc agctcttgct tcgcgtccag 180

FRAV20030009 US NP Sequence Listing.txt

acaggctctt ctcagccatc tgtgagtcca gaggaactgt ctccaccatc catccagcca	240
gcaaaatcag agttaatcgt cagtgtctggc gatgagatta ggctgttctg caccgatcca	300
ggatctgtca aatggacttt tgagaccctg ggctcagtga gtgagaatac tcacgcagag	360
tggatcgtgg agaaagcaga ggccatgaat acaggcaatt atacatgcac caatgaaggc	420
ggtttaagca gttccattta tgtgtttgtt agagatcctg agaagctttt cctcgtcgac	480
cctcccttgt atgggaagga ggacaatgac gcgctgggtcc gctgtcctct gacggaccca	540
gaggtgacca attactccct cacgggctgc gaggggaaac cccttcccaa ggatttgacc	600
ttcgttgcag accccaaggc cggtcatcacc atcaaaaatg tgaagcgcga gtatcatcgg	660
ctgtgtctac actgctccgc caaccagggg ggcaagtccg tgctgtcgaa gaaattcacc	720
ctgaaagtga gggcagccat cagagctgta cctgttgtgg ctgtgtccaa agcaagctac	780
cttctcaggg aaggggagga atttgccgtg atgtgcttga tcaaagacgt gtctagtacc	840
gtggactcca tgtggatcag ggagaacagc cagactaaag cacaggtgaa gaggaatagc	900
tggcatcagg gtgacttcaa ttttctgcgg caggaaaggc tgacaatcag ctcagcaaga	960
gttaatgatt ctggcgtgtt catgtgttac gccataata cttttggatc tgcaaatgtc	1020
acaaccacct tagaagtagt agataaagga ttcattaata tcttccctat gatgaatacc	1080
actgtgtttg taaacgatgg agaggatgtg gatctaattg ttgagtacga ggcgtacccc	1140
aaacctgaac accgacagtg gatatatatg aaccgcactg ccactgataa gtgggaggat	1200
tatcccaagt ctgagaatga aagtaacatc agatatgtaa gtgaacttca cttgaccaga	1260
ttaaaaggga ccgaaggagg cacttacaca tttctcgtgt ccaatgctga tgtcaattct	1320
tctgtgacat ttaatgttta cgtgaacaca aaaccagaaa tcctgactca tgacaggctc	1380
atgaacggca tgctccagtg tgtggcggca ggcttcccag agcccaccat cgattggtat	1440
ttctgtccag gcaccgagca gagatgttcc gttcccgttg ggccagtgga cgtgcagatc	1500
caaaactcat ctgtatcacc gtttggaata ctagtgattc acagctccat tgattacagt	1560
gcattcaaac acaacggcac ggtggagtgc agggcttaca acgatgtggg caagagttct	1620
gcctttttta actttgcatt taaagaacaa atccatgccc acaccctctt cacgcctttg	1680
ctgattgggt ttgtgatcgc agcgggtatg atgtgtatca tcgtgatgat tctcacctat	1740
aaatatctac agaagcccat gtatgaagta cagtggaagg ttgtcgagga gataaatgga	1800
aacaattatg tctacataga cccaacgcaa cttccttatg atcacaaatg ggaatttccc	1860
aggaacaggc tgagtttttg caaaaccttg ggtgctggcg ccttcgggaa agtcgttgag	1920

FRAV20030009 US NP Sequence Listing.txt

gccactgcat	acggccttaat	taagtcagat	gcggccatga	ccgttgccgt	gaagatgctc	1980
aaaccaagtg	cccattttaac	ggaacgagaa	gccctgatgt	ctgaactcaa	agtcttaagt	2040
tacctcggt	atcacatgaa	tattgtgaat	cttctcggcg	cctgcaccat	tggagggccc	2100
accctgggtca	ttacagaata	ttgttgctat	ggtgatctcc	tgaatttttt	gagacggaaa	2160
cgtgattcgt	ttatttgctc	aaagcaggaa	gatcacgcag	aagcggcgct	ttataagaac	2220
cttctgcatt	caaaggagtc	ttcctgcagt	gacagtacta	acgagtacat	ggacatgaaa	2280
cccggagtg	cttatgtggt	accaaccaag	gcagacaaaa	ggagatctgc	gagaataggc	2340
tcatacatag	aacgagatgt	gactcctgcc	atcatggaag	atgatgagtt	ggccctagac	2400
ctggaggact	tgctcagctt	ttcttaccaa	gtggcaaagg	gcatggcctt	cctcgcctcg	2460
aagaattgta	ttcacagaga	cttggcggcc	agaaatatcc	tccttactca	tggtcgaatc	2520
acaaagattt	gtgatttttg	tctagccaga	gacatcaaga	atgattctaa	ttacgtggtc	2580
aaaggaaacg	ctcggctacc	cgtgaagtgg	atggcacccg	agagcatttt	caactgtgtc	2640
tacacatttg	aaagcgaatg	ctggtcctat	gggatttttc	tgtgggagct	cttctcttta	2700
gggagcagcc	cctaccctgg	aatgccagtt	gattctaaat	tctacaagat	gatcaaggag	2760
ggtttccgaa	tgctcagtcc	tgagcatgca	cctgcggaaa	tgtatgacat	catgaagact	2820
tgctgggatg	cggatcccct	caaaagacca	acgtttaagc	agattgtgca	gctgattgag	2880
aagcagattt	cggagagcac	caatcacatt	tattccaact	tagcgaactg	cagccccac	2940
cgggagaacc	ccgcggtgga	tcattctgtg	cggatcaact	ccgtgggcag	cagtgcctcc	3000
tccacgcagc	cgctgcttgt	ccacgaagac	gtctgaagca	gaatgggtgt	ccggggtggg	3060
gggtgggggg	gctcctcccc	cacagcaccg	gcctactgcc	attctttttg	gttttcataa	3120
tgggtatttt	gtttcccttc	aacttgcatt	ctactccagg	gtagtggatg	ctccgctgta	3180
atcctcttta	cgagcacact	ttagtggcca	atgatttttg	tcattcagctg	ccattgagct	3240
gtatatgttc	ccaatagcac	gctagcccc	attaacggag	agcattcaga	cttagggaag	3300
aggagggtag	gacgggctgg	acaccccagg	tccttgacaa	gtcttctcca	gtttctgtcc	3360
aataagtgtc	gtaatggttt	atttgagcac	ctggctgtcg	tcacctccgg	tccttgtcat	3420
catctgtaac	aatatgatga	tgatgatgcc	agaaccta	cccttgatgt	ggaaaatagg	3480
atgttaatca	aacaaagggc	agaaagaagc	ctgtgactat	ctgggctcga	gaagtcaagt	3540
atctcatgct	gggagtaaga	cgtaagccat	ggaaaaatgc	tctccgggca	tgaataaggc	3600
tgctggccat	gagccttttt	actcctgacc	tggttntaa	gtagtttggt	attagggagc	3660
tggatcggag	ggaaggcttc	tgccctgcatt	ttgtatatatac	tcattctataa	attgttcatg	3720

FRAV20030009 US NP Sequence Listing.txt

```

ttcacatatt tgagggggga aaacccgcaa ggtgtagttt ctggatacaa tcctggctcg 3780
agtctgctgc gtgtagaaat agctgaagag ccagacacgt ttgaaggaaa cagtgcctttt 3840
ttaaagaaaa aaaaaaaaaa aagtcgacat cgatacgctt ggtcaatcac tagtgaattc 3900
gcggccgcct gcaggtcgac canaaggaga gctcccaacg cgtggagcaa gc 3952

```

<210> 2
 <211> 972
 <212> PRT
 <213> Sus scrofa

<400> 2
 Met Arg Gly Ala Arg Arg Ala Trp Asp Phe Leu Phe Val Leu Gln Leu
 1 5 10 15
 Leu Leu Arg Val Gln Thr Gly Ser Ser Gln Pro Ser Val Ser Pro Glu
 20 25 30
 Glu Leu Ser Pro Pro Ser Ile Gln Pro Ala Lys Ser Glu Leu Ile Val
 35 40 45
 Ser Ala Gly Asp Glu Ile Arg Leu Phe Cys Thr Asp Pro Gly Ser Val
 50 55 60
 Lys Trp Thr Phe Glu Thr Leu Gly Gln Leu Ser Glu Asn Thr His Ala
 65 70 75 80
 Glu Trp Ile Val Glu Lys Ala Glu Ala Met Asn Thr Gly Asn Tyr Thr
 85 90 95
 Cys Thr Asn Glu Gly Gly Leu Ser Ser Ser Ile Tyr Val Phe Val Arg
 100 105 110
 Asp Pro Glu Lys Leu Phe Leu Val Asp Pro Pro Leu Tyr Gly Lys Glu
 115 120 125
 Asp Asn Asp Ala Leu Val Arg Cys Pro Leu Thr Asp Pro Glu Val Thr
 130 135 140
 Asn Tyr Ser Leu Thr Gly Cys Glu Gly Lys Pro Leu Pro Lys Asp Leu
 145 150 155 160
 Thr Phe Val Ala Asp Pro Lys Ala Gly Ile Thr Ile Lys Asn Val Lys
 165 170 175
 Arg Glu Tyr His Arg Leu Cys Leu His Cys Ser Ala Asn Gln Gly Gly
 180 185 190
 Lys Ser Val Leu Ser Lys Lys Phe Thr Leu Lys Val Arg Ala Ala Ile
 195 200 205
 Arg Ala Val Pro Val Val Ala Val Ser Lys Ala Ser Tyr Leu Leu Arg
 210 215 220

FRAV20030009 US NP Sequence Listing.txt

Glu Gly Glu Glu Phe Ala Val Met Cys Leu Ile Lys Asp Val Ser Ser
 225 230 235 240
 Ser Val Asp Ser Met Trp Ile Arg Glu Asn Ser Gln Thr Lys Ala Gln
 245 250 255
 Val Lys Arg Asn Ser Trp His Gln Gly Asp Phe Asn Phe Leu Arg Gln
 260 265 270
 Glu Arg Leu Thr Ile Ser Ser Ala Arg Val Asn Asp Ser Gly Val Phe
 275 280 285
 Met Cys Tyr Ala Asn Asn Thr Phe Gly Ser Ala Asn Val Thr Thr Thr
 290 295 300
 Leu Glu Val Val Asp Lys Gly Phe Ile Asn Ile Phe Pro Met Met Asn
 305 310 315 320
 Thr Thr Val Phe Val Asn Asp Gly Glu Asp Val Asp Leu Ile Val Glu
 325 330 335
 Tyr Glu Ala Tyr Pro Lys Pro Glu His Arg Gln Trp Ile Tyr Met Asn
 340 345 350
 Arg Thr Ala Thr Asp Lys Trp Glu Asp Tyr Pro Lys Ser Glu Asn Glu
 355 360 365
 Ser Asn Ile Arg Tyr Val Ser Glu Leu His Leu Thr Arg Leu Lys Gly
 370 375 380
 Thr Glu Gly Gly Thr Tyr Thr Phe Leu Val Ser Asn Ala Asp Val Asn
 385 390 395 400
 Ser Ser Val Thr Phe Asn Val Tyr Val Asn Thr Lys Pro Glu Ile Leu
 405 410 415
 Thr His Asp Arg Leu Met Asn Gly Met Leu Gln Cys Val Ala Ala Gly
 420 425 430
 Phe Pro Glu Pro Thr Ile Asp Trp Tyr Phe Cys Pro Gly Thr Glu Gln
 435 440 445
 Arg Cys Ser Val Pro Val Gly Pro Val Asp Val Gln Ile Gln Asn Ser
 450 455 460
 Ser Val Ser Pro Phe Gly Lys Leu Val Ile His Ser Ser Ile Asp Tyr
 465 470 475 480
 Ser Ala Phe Lys His Asn Gly Thr Val Glu Cys Arg Ala Tyr Asn Asp
 485 490 495
 Val Gly Lys Ser Ser Ala Phe Phe Asn Phe Ala Phe Lys Glu Gln Ile
 500 505 510
 His Ala His Thr Leu Phe Thr Pro Leu Leu Ile Gly Phe Val Ile Ala
 515 520 525
 Ala Gly Met Met Cys Ile Ile Val Met Ile Leu Thr Tyr Lys Tyr Leu
 530 535 540

FRAV20030009 US NP Sequence Listing.txt

Gln	Lys	Pro	Met	Tyr	Glu	Val	Gln	Trp	Lys	Val	Val	Glu	Glu	Ile	Asn	
545					550				555						560	
Gly	Asn	Asn	Tyr	Val	Tyr	Ile	Asp	Pro	Thr	Gln	Leu	Pro	Tyr	Asp	His	
			565					570						575		
Lys	Trp	Glu	Phe	Pro	Arg	Asn	Arg	Leu	Ser	Phe	Gly	Lys	Thr	Leu	Gly	
			580					585					590			
Ala	Gly	Ala	Phe	Gly	Lys	Val	Val	Glu	Ala	Thr	Ala	Tyr	Gly	Leu	Ile	
		595					600					605				
Lys	Ser	Asp	Ala	Ala	Met	Thr	Val	Ala	Val	Lys	Met	Leu	Lys	Pro	Ser	
	610					615					620					
Ala	His	Leu	Thr	Glu	Arg	Glu	Ala	Leu	Met	Ser	Glu	Leu	Lys	Val	Leu	
625					630					635					640	
Ser	Tyr	Leu	Gly	Asn	His	Met	Asn	Ile	Val	Asn	Leu	Leu	Gly	Ala	Cys	
				645					650					655		
Thr	Ile	Gly	Gly	Pro	Thr	Leu	Val	Ile	Thr	Glu	Tyr	Cys	Cys	Tyr	Gly	
		660						665					670			
Asp	Leu	Leu	Asn	Phe	Leu	Arg	Arg	Lys	Arg	Asp	Ser	Phe	Ile	Cys	Ser	
	675						680					685				
Lys	Gln	Glu	Asp	His	Ala	Glu	Ala	Ala	Leu	Tyr	Lys	Asn	Leu	Leu	His	
	690					695					700					
Ser	Lys	Glu	Ser	Ser	Cys	Ser	Asp	Ser	Thr	Asn	Glu	Tyr	Met	Asp	Met	
705					710					715					720	
Lys	Pro	Gly	Val	Ser	Tyr	Val	Val	Pro	Thr	Lys	Ala	Asp	Lys	Arg	Arg	
				725					730					735		
Ser	Ala	Arg	Ile	Gly	Ser	Tyr	Ile	Glu	Arg	Asp	Val	Thr	Pro	Ala	Ile	
			740					745					750			
Met	Glu	Asp	Asp	Glu	Leu	Ala	Leu	Asp	Leu	Glu	Asp	Leu	Leu	Ser	Phe	
		755					760					765				
Ser	Tyr	Gln	Val	Ala	Lys	Gly	Met	Ala	Phe	Leu	Ala	Ser	Lys	Asn	Cys	
	770					775					780					
Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Ile	Leu	Leu	Thr	His	Gly	Arg	
785					790					795					800	
Ile	Thr	Lys	Ile	Cys	Asp	Phe	Gly	Leu	Ala	Arg	Asp	Ile	Lys	Asn	Asp	
			805					810						815		
Ser	Asn	Tyr	Val	Val	Lys	Gly	Asn	Ala	Arg	Leu	Pro	Val	Lys	Trp	Met	
			820					825					830			
Ala	Pro	Glu	Ser	Ile	Phe	Asn	Cys	Val	Tyr	Thr	Phe	Glu	Ser	Asp	Val	
		835					840					845				
Trp	Ser	Tyr	Gly	Ile	Phe	Leu	Trp	Glu	Leu	Phe	Ser	Leu	Gly	Ser	Ser	

FRAV20030009 US NP Sequence Listing.txt

850

855

860

Pro Tyr Pro Gly Met Pro Val Asp Ser Lys Phe Tyr Lys Met Ile Lys
865 870 875 880

Glu Gly Phe Arg Met Leu Ser Pro Glu His Ala Pro Ala Glu Met Tyr
885 890 895

Asp Ile Met Lys Thr Cys Trp Asp Ala Asp Pro Leu Lys Arg Pro Thr
900 905 910

Phe Lys Gln Ile Val Gln Leu Ile Glu Lys Gln Ile Ser Glu Ser Thr
915 920 925

Asn His Ile Tyr Ser Asn Leu Ala Asn Cys Ser Pro His Arg Glu Asn
930 935 940

Pro Ala Val Asp His Ser Val Arg Ile Asn Ser Val Gly Ser Ser Ala
945 950 955 960

Ser Ser Thr Gln Pro Leu Leu Val His Glu Asp Val
965 970

<210> 3

<211> 8

<212> PRT

<213> Sus scrofa

<400> 3

Pro Leu Leu Val His Glu Asp Val
1 5

<210> 4

<211> 936

<212> DNA

<213> Sus scrofa

<220>

<221> CDS

<222> (1)..(936)

<400> 4

atggccgcgc tgctcctggg cgcggtgatg ctggtccttc agctccagct ggtgccttgc 60
cgccccgccca tgcccggggc cgggccgagc cagcaggagc ttgtgcggaa agcggcgacc 120
ctccaggatg aggtccggga cagcgcggcc cccaacggct ccgctccagca gctgccgcag 180
accatcatca tcggcgtgcg caagggcggg acccgcgcg tgetggagat gctcagcctg 240
catcccgcagc tggctgctgc ggagaacgag gtgcacttct tcgactggga ggagcattac 300
agccaaggcc tggactggta cctcagccag atgcccttct cctacccgca ccagctcacg 360
gttgaaaaga cccccgcgta cttcacgtcg ccaaagtgc ctgagcgggt ccaccgcatg 420
aaccgtcca tccggtgct gctcatcctg cgggacccgt cggagcgcgt gctgtccgac 480

FRAV20030009 US NP Sequence Listing.txt

tacacccaag tgttctacaa ccacgtgcag aagcacaagc cctacccgtc catcgaggag	540
ttcctgggtgc gcgacggccg cctcaacgtg gactacaagg ccctcaaccg aagcctgtac	600
cacgtgcaca tgcagaactg gctgcgcttc ttcccgtgctg gccgcatcca catcggtggat	660
ggcgaccgcc tcatcagggg cccttttcct gagatccaga aggtcgagag gttcctgatg	720
ctgtcgccgc agatcaacgc ctcgaacttc tactttaaca aaaccaaggg cttttactgc	780
ctgcgggacg gcggccggga ccgctgctta catgagtcca aaggccgggc gcacccccag	840
atcgacccca aactcctcaa taaactgcac gaatatcttc atgagccaaa taagaaattt	900
ttcgagcttg tgggcagaac atttgactgg cactaa	936

<210> 5

<211> 311

<212> PRT

<213> Sus scrofa

<400> 5

Met Ala Ala Leu Leu Leu Gly Ala Val Met Leu Val Leu Gln Leu Gln	
1 5 10 15	
Leu Val Pro Cys Arg Pro Ala Met Pro Gly Ala Gly Pro Ser Gln Gln	
20 25 30	
Glu Leu Val Arg Lys Ala Ala Thr Leu Gln Asp Glu Val Arg Asp Ser	
35 40 45	
Ala Ala Pro Asn Gly Ser Val Gln Gln Leu Pro Gln Thr Ile Ile Ile	
50 55 60	
Gly Val Arg Lys Gly Gly Thr Arg Ala Leu Leu Glu Met Leu Ser Leu	
65 70 75 80	
His Pro Asp Val Ala Ala Ala Glu Asn Glu Val His Phe Phe Asp Trp	
85 90 95	
Glu Glu His Tyr Ser Gln Gly Leu Asp Trp Tyr Leu Ser Gln Met Pro	
100 105 110	
Phe Ser Tyr Pro His Gln Leu Thr Val Glu Lys Thr Pro Ala Tyr Phe	
115 120 125	
Thr Ser Pro Lys Val Pro Glu Arg Val His Arg Met Asn Pro Ser Ile	
130 135 140	
Arg Leu Leu Leu Ile Leu Arg Asp Pro Ser Glu Arg Val Leu Ser Asp	
145 150 155 160	
Tyr Thr Gln Val Phe Tyr Asn His Val Gln Lys His Lys Pro Tyr Pro	
165 170 175	
Ser Ile Glu Glu Phe Leu Val Arg Asp Gly Arg Leu Asn Val Asp Tyr	
180 185 190	

FRAV20030009 US NP Sequence Listing.txt

Lys Ala Leu Asn Arg Ser Leu Tyr His Val His Met Gln Asn Trp Leu
 195 200 205

Arg Phe Phe Pro Leu Arg Arg Ile His Ile Val Asp Gly Asp Arg Leu
 210 215 220

Ile Arg Asp Pro Phe Pro Glu Ile Gln Lys Val Glu Arg Phe Leu Met
 225 230 235 240

Leu Ser Pro Gln Ile Asn Ala Ser Asn Phe Tyr Phe Asn Lys Thr Lys
 245 250 255

Gly Phe Tyr Cys Leu Arg Asp Gly Gly Arg Asp Arg Cys Leu His Glu
 260 265 270

Ser Lys Gly Arg Ala His Pro Gln Ile Asp Pro Lys Leu Leu Asn Lys
 275 280 285

Leu His Glu Tyr Phe His Glu Pro Asn Lys Lys Phe Phe Glu Leu Val
 290 295 300

Gly Arg Thr Phe Asp Trp His
 305 310

<210> 6
 <211> 1236
 <212> DNA
 <213> Sus scrofa

<220>
 <221> CDS
 <222> (1)..(1236)

<400> 6
 atgcggcggc ggcgcgctgg cagcaggacc atggttgagc gcgccagcaa gttcgtgctg 60
 gtcgtggcgg gctcggcgtg cttcatgctc atcctctacc agtacgcggg cccggggcgtg 120
 agcctgggcg cgcccgcgcg ccgcgcgccg cccgacgacc tggacctctt cccacgccc 180
 gacccgcact acgagaagaa gtactacttc ccggtgcgcg agctggagcg ctgctgcac 240
 ttgcacatga agggcgacga cgtgatagtc ttcttgaca tccagaaaac gggcggcacc 300
 accttcggcc gtcacctcgt gcagaacgtg cgcctcgagg tgccctgcga ctgccggccc 360
 ggccagaaga agtgcacctg ctaccggccc aaccgccgcg agacctggct cttctccgc 420
 ttctccacgg gctggagctg cggactgcac gccgactgga ccgagctcac caactgcgtg 480
 cccggcgtgc tggaccgccg cgaccccgcc gcgctgcgca cgccaggaa gttctactac 540
 atcaccctgc tgcgagaccc cgtgtcccgc tacctgagtg agtggcggca tgtacagcgg 600
 ggggccacat ggaagacgtc gctgcacatg tgtgacgggc gcacgcccac ccctgaggag 660
 ctgccaccct gctacgaggg cacggactgg tcgggctgca cactgcagga gttcatggac 720

FRAV20030009 US NP Sequence Listing.txt

```

tgcccctaca acctggccaa taaccgccag gtgcgaatgc tggccgacct gagcctggtg      780
ggctgctaca acctgtcctt catccccgag ggcaagcggg cccaactgct gctggaaagc      840
gccaagaaga acctgcgggg catggccttc ttcggcctga ccgagttcca gcgcaagacg      900
cagtacctgt tcgagcggac gttcaacctc aagttcatcc ggcctttcat gcagtacaac      960
agcacgcgag cgggtggcgt ggaggtgggt gaggacacca tccggcgcat tgaggagctc    1020
aacgacctgg acatgcagct gtacgactac gccagggacc tcttcagca gcgctatcag    1080
tacaagcggc agctggagcg ccggcagcag cgcctccgga gccgcgagga gcgctgctg    1140
caccgggcca aggaggcgcc acctcggggg gacaccgagg agccggggcg agtgcccact    1200
gaggactaca tgagccacat catcgagaag tggtag                                1236

```

<210> 7
 <211> 411
 <212> PRT
 <213> Sus scrofa

<400> 7

Met	Arg	Arg	Arg	Arg	Ala	Gly	Ser	Arg	Thr	Met	Val	Glu	Arg	Ala	Ser
1				5					10					15	
Lys	Phe	Val	Leu	Val	Val	Ala	Gly	Ser	Ala	Cys	Phe	Met	Leu	Ile	Leu
			20					25					30		
Tyr	Gln	Tyr	Ala	Gly	Pro	Gly	Leu	Ser	Leu	Gly	Ala	Pro	Gly	Gly	Arg
		35					40					45			
Ala	Pro	Pro	Asp	Asp	Leu	Asp	Leu	Phe	Pro	Thr	Pro	Asp	Pro	His	Tyr
	50					55					60				
Glu	Lys	Lys	Tyr	Tyr	Phe	Pro	Val	Arg	Glu	Leu	Glu	Arg	Ser	Leu	His
	65				70					75					80
Phe	Asp	Met	Lys	Gly	Asp	Asp	Val	Ile	Val	Phe	Leu	His	Ile	Gln	Lys
				85					90					95	
Thr	Gly	Gly	Thr	Thr	Phe	Gly	Arg	His	Leu	Val	Gln	Asn	Val	Arg	Leu
			100					105					110		
Glu	Val	Pro	Cys	Asp	Cys	Arg	Pro	Gly	Gln	Lys	Lys	Cys	Thr	Cys	Tyr
		115					120					125			
Arg	Pro	Asn	Arg	Arg	Glu	Thr	Trp	Leu	Phe	Ser	Arg	Phe	Ser	Thr	Gly
		130				135					140				
Trp	Ser	Cys	Gly	Leu	His	Ala	Asp	Trp	Thr	Glu	Leu	Thr	Asn	Cys	Val
145					150					155					160
Pro	Gly	Val	Leu	Asp	Arg	Arg	Asp	Pro	Ala	Ala	Leu	Arg	Thr	Pro	Arg
				165					170					175	

FRAV20030009 US NP Sequence Listing.txt

Lys Phe Tyr Tyr Ile Thr Leu Leu Arg Asp Pro Val Ser Arg Tyr Leu
180 185 190

Ser Glu Trp Arg His Val Gln Arg Gly Ala Thr Trp Lys Thr Ser Leu
195 200 205

His Met Cys Asp Gly Arg Thr Pro Thr Pro Glu Glu Leu Pro Pro Cys
210 215 220

Tyr Glu Gly Thr Asp Trp Ser Gly Cys Thr Leu Gln Glu Phe Met Asp
225 230 235 240

Cys Pro Tyr Asn Leu Ala Asn Asn Arg Gln Val Arg Met Leu Ala Asp
245 250 255

Leu Ser Leu Val Gly Cys Tyr Asn Leu Ser Phe Ile Pro Glu Gly Lys
260 265 270

Arg Ser Gln Leu Leu Leu Glu Ser Ala Lys Lys Asn Leu Arg Gly Met
275 280 285

Ala Phe Phe Gly Leu Thr Glu Phe Gln Arg Lys Thr Gln Tyr Leu Phe
290 295 300

Glu Arg Thr Phe Asn Leu Lys Phe Ile Arg Pro Phe Met Gln Tyr Asn
305 310 315 320

Ser Thr Arg Ala Gly Gly Val Glu Val Gly Glu Asp Thr Ile Arg Arg
325 330 335

Ile Glu Glu Leu Asn Asp Leu Asp Met Gln Leu Tyr Asp Tyr Ala Arg
340 345 350

Asp Leu Phe Gln Gln Arg Tyr Gln Tyr Lys Arg Gln Leu Glu Arg Arg
355 360 365

Gln Gln Arg Leu Arg Ser Arg Glu Glu Arg Leu Leu His Arg Ala Lys
370 375 380

Glu Ala Pro Pro Arg Gly Asp Thr Glu Glu Pro Gly Arg Val Pro Thr
385 390 395 400

Glu Asp Tyr Met Ser His Ile Ile Glu Lys Trp
405 410

<210> 8
<211> 39
<212> DNA
<213> Sus scrofa

<400> 8
gaccacgcgt atcgatgtcg actttttttt ttttttttv

39

<210> 9
<211> 33
<212> DNA
<213> Sus scrofa

FRAV20030009 US NP Sequence Listing.txt

<400> 9	
ggaattcctc gagagcagga acgtggaaag gag	33
<210> 10	
<211> 22	
<212> DNA	
<213> Sus scrofa	
<400> 10	
gaccacgcgt atcgatgtcg ac	22
<210> 11	
<211> 17	
<212> DNA	
<213> Sus scrofa	
<400> 11	
gcagcagcca cgtcggg	17
<210> 12	
<211> 20	
<212> DNA	
<213> Sus scrofa	
<400> 12	
tcagtgyccag tcraatgttc	20
<210> 13	
<211> 18	
<212> DNA	
<213> Sus scrofa	
<400> 13	
cgnggaccgc ctnatcag	18
<210> 14	
<211> 20	
<212> DNA	
<213> Sus scrofa	
<400> 14	
tcagtgyccag tcraatgttc	20
<210> 15	
<211> 27	
<212> DNA	
<213> Sus scrofa	
<400> 15	
attctagagg ccgaggcggc cgacatg	27

FRAV20030009 US NP Sequence Listing.txt

<210> 16
 <211> 19
 <212> DNA
 <213> Sus scrofa

 <400> 16
 gcacccccag atcgacccc 19

 <210> 17
 <211> 23
 <212> DNA
 <213> Sus scrofa

 <400> 17
 caaactcctc aataaactgc acg 23

 <210> 18
 <211> 48
 <212> DNA
 <213> Sus scrofa

 <400> 18
 ggggacaagt ttgtacaaaa aagcaggctc agcatggccg cgctgctc 48

 <210> 19
 <211> 52
 <212> DNA
 <213> Sus scrofa

 <400> 19
 gggaccactt tgtacaagaa agctggggtt agtgccagtc aaatgttctg cc 52

 <210> 20
 <211> 19
 <212> DNA
 <213> Sus scrofa

 <400> 20
 agatgactgg tcgggctgc 19

 <210> 21
 <211> 23
 <212> DNA
 <213> Sus scrofa

 <400> 21
 caatgatrtg gctcatgtag tcc 23

 <210> 22
 <211> 25
 <212> DNA
 <213> Sus scrofa

FRAV20030009 US NP Sequence Listing.txt

<400> 22
atggttgagc gcgccagcaa gttcg 25

<210> 23
<211> 24
<212> DNA
<213> Sus scrofa

<400> 23
ggttattggc caggttgtag gggc 24

<210> 24
<211> 28
<212> DNA
<213> Sus scrofa

<400> 24
attctagagg ccgaggcggc cgacatgt 28

<210> 25
<211> 18
<212> DNA
<213> Sus scrofa

<400> 25
ggacctcttc cagcagcg 18

<210> 26
<211> 21
<212> DNA
<213> Sus scrofa

<400> 26
gctatcagta caagcggcag c 21

<210> 27
<211> 16
<212> DNA
<213> Sus scrofa

<400> 27
ccaggctcag ccccg 16

<210> 28
<211> 39
<212> DNA
<213> Sus scrofa

<400> 28
gaccacgcgt atcgatgtcg actttttttt ttttttttv 39

<210> 29

FRAV20030009 US NP Sequence Listing.txt

<211> 23
 <212> DNA
 <213> Sus scrofa

 <400> 29
 ggcaatgtcg acctccctac aac 23

 <210> 30
 <211> 17
 <212> DNA
 <213> Sus scrofa

 <400> 30
 tcagccccgg gcccgcg 17

 <210> 31
 <211> 23
 <212> DNA
 <213> Sus scrofa

 <400> 31
 ctccctacaa cccgaattcc tac 23

 <210> 32
 <211> 19
 <212> DNA
 <213> Sus scrofa

 <400> 32
 gcccgctac tggtagagg 19

 <210> 33
 <211> 56
 <212> DNA
 <213> Sus scrofa

 <400> 33
 ggggacaagt ttgtacaaaa aagcaggctt aggacaatgg tgacacatgc ggcggc 56

 <210> 34
 <211> 55
 <212> DNA
 <213> Sus scrofa

 <400> 34
 ggggaccact ttgtacaaga aagctgggctc ctaccacttc tcgatgatgt ggctc 55